



**“PARAMETER INVESTIGATION ON ROBOTIC WELDING
FOR SHIP PANEL STRUCTURE”**

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"I declared that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any bachelor degree and is not concurrently submitted in candidature of any bachelor degree."

Signed : 

Date : 24/05/10
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ABSTRACT

This project discusses about the study of the best parameters needed in order to perform the best robotic welding result. The joints that will be focused are more on the “T-Joint” and “Butt Joint” welding, using the KEMPPI PROMIG 530 feeder with the ABB IRC5 controller robotic welding. A major concern involving procedure optimization should define a welding procedure that can be shown to be the best with respect to some standard, and chosen combination of process parameters, which give an acceptable balance between production rate and the scope of defects for a given situation. And for the project’s situation, all the resulting welding will then be applied to a design from the ship panels.

A large number of experiment need to be done, in order to obtain the best parameters. The parameters will include the current, voltage, weave, welding speed, seam and other manipulative values of the robotic welding. After all the parameters were applied to the T Joint and Butt Joint specimens, and a macrostructure test will be performed. And after the completion of the test only the best parameters can be identified.

Once the best parameters of the robotic welding to the T Joint and Butt Joint obtained, it will be then applied to the design, which will be a part of the ship panels design. This process will be involving the NGV TECH SDN BHD, one of the largest Malaysia’s ship manufacturers. The design must be relevant with the capabilities of the Robotic Welding Arm, to ensure a perfect weld can be done.

The final coverage for the project will be about the software of the Robotic Welding itself, the Robotstudio and ARC Welding Power Pac (AWPP). Both of the software will help a lot to program the Robotic Welding in an easier way.